Time-Lapse Videos of Seasonal Changes

in the National Parks of northern and central Alaska

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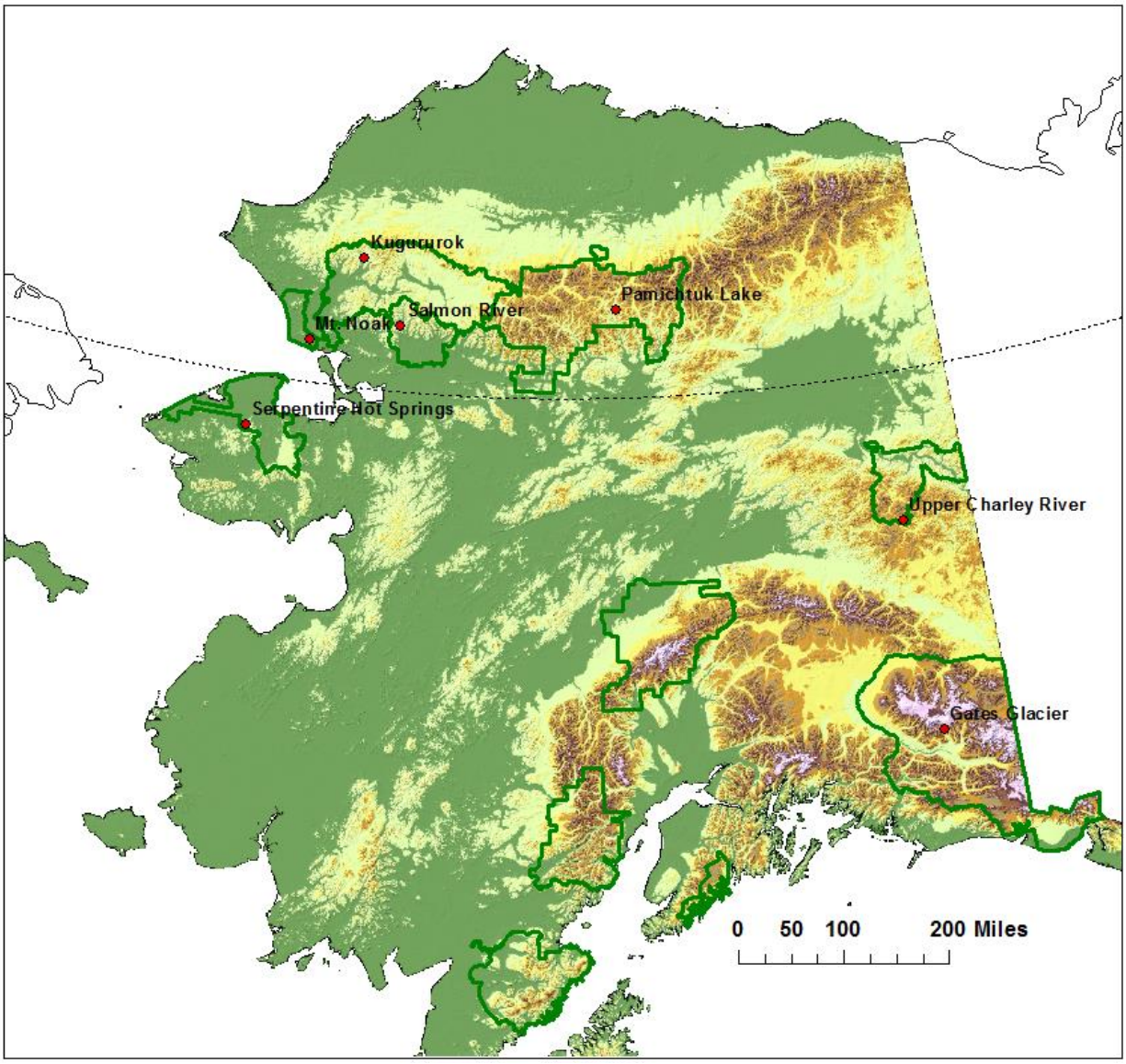

Gates Glacier
Wrangell-St. Elias National Park and Preserve
Latitude 61.6029°, longitude -143.0132°
Elevation 4060 ft (1237 m), looking northeast across herbaceous tundra toward Gates Glacier.
2013 (ggl13.mp4). We started this camera in late June, when just a little patch of snow from the previous winter remained in the foreground. A white, purple, and yellow wildflowers bloomed through the month of July. First the white Dryas bloomed in the foreground, then the purple lupines came up among them, followed by the big white cow-parsnip on the slope behind. In August the pink fireweed bloomed on the slope too, and then at the end of the month the cow-parsnip leaves turned yellow. Snow came in early October and quickly got deep enough to cover all of the plants. The battery ran out in late November.
2014 (ggl14.mp4). We restarted the camera with our visit in early July, when the lupines were already starting to bloom. A snowstorm on September 22 melted off the south-facing slopes in the background but not completely from the north-facing foreground slope. A Dall's sheep left tracks in the snow near the camera at the end of September, and more sheep left tracks on the slope in the background in mid-November; a weasel left tracks near the camera on December 27.
2015 (ggl15.mp4). Snowmelt progressed through May, starting on the steep, south-facing slopes in the distance on the right and finishing near the camera at the end of May. Lupines bloomed in June and pink fireweed in July. The first snow came on September 12th, but snow came and went through the rest of September and October before finally sticking for good around November 1.

Kugururok
Noatak National Preserve
Latitude 68.3333°, longitude -161.3759°
Elevation 1020 ft (311 m), looking east across low shrub tundra, and riparian shrub with balsam poplars.
2015. Photos started on June 5, when green-up was just starting and there was a little ice still in the creek in the foreground. By late June the willows on the nearby slope were fully green. In mid-August a few low shrubs were turning red, and in late August the willows and poplars on the floodplain were yellow, with red shrub birch in the foreground. The first snow accumulated on September 12, but it melted along with another snowfall in late September before snow stayed for good on October 13.

Mt. Noak
Cape Krusenstern National Monument
Latitude 67.1414°, longitude -162.9945°
Elevation 840 ft (256 m), looking north across Dryas tundra dwarf-shrub tundra
2013 (mno13.mp4). We started our camera in late June, 2013 and the camera was tilted (probably by a musk-ox!) in July 2013. This place is windy with shallow snow that melted off during a few unusual warm spells in the early winter of 2013. The camera ran into November when it stopped working for the rest of the 2013-14 winter.
2014 (mno14.mp4). We straightened the camera back up and restarted it during our annual maintenance visit in July 2014. The fall was dry with two light dustings of snow in September and October before the snow came for good in late October. On clear days in late December you can see the noon-day pink twilight colors that come with its location above the Arctic Circle.
2015 (mno15.mp4). The windswept hills in the background face south and started losing their snow in late April, while the foreground snow melted off quickly in mid-May. The camera got bumped again (by

another musk-ox?) in May 2015! We re-positioned it during our early June visit when green-up was just starting. In mid-June the pink louseworts and white Dryas were blooming. By the first week in August a few low shrubs were already turning red, and the grass was brown by September. The first snow came on September 24th, and melted off before staying for good starting October 12.

Pamichtuk
Gates of the Arctic National Park and Preserve
Latitude 67.7663°, longitude -152.1642°
Elevation 3343 ft (1019 m), looking north across Dryas tundra dwarf-shrub tundra
2013 (pam13.mp4. The fence post and electric fence strands on this video are our attempt to discourage grizzly bears from damaging the instruments. This video begins late May, 2013 and runs until the camera quit working in November 2013. The white flowers that bloomed in June in the foreground are dryas (*Dryas octapetala*). Their fluffy white seed heads turn white again in July.
2014 (pam14.mp4). We restarted the camera during our annual maintenance visit in June, 2014 and it worked all through the winter of 2014-15. The snow never gets very deep on this windswept hilltop.
2015 (pam15.mp4). Spring came early this year with an early May snowmelt, but snow on June 11 reminded us this is still the Arctic. White dryas and pink lousework flowers appear in late May. Fall colors came in August and a dusting of snow at the end of August melted off during a bit of fine fall weather before the snow came for good on September 9. Probable fox tracks showed up in early October, and snow and rime covered the camera for much of November and December.

Salmon River
Kobuk Valley National Park
Latitude 67.4599°, longitude -159.8413°
Elevation 1250 ft (381 m), looking north at an alder thicket with a tundra hilltop in the backgroud
2013 (srw13.mp4). We started this camera in July and it ran through November, 2013 and then quit working. The tall shrubs visible in the middle of the view are mostly alders (the ones that stay green late in the fall) and a few willows (the ones that turn yellow). The hill in the background turns red thanks to birch (*Betula nana*) and blueberry (*Vaccinium uliginosum*) shrubs. Our camera caught a harrier flying through the frame on October 19.
2014 (srw14.mp4). The station was hit by a bear in April of 2014, so we installed an electric fence and restarted the camera (with a slightly different view) in late July, 2014. A bear was seen walking by our camera on 22 September 2014. Deep snow fell in late October and tracks on October 29 show a bear was still wandering the area at that time. High winds in mid-December scoured most of the snow from the foreground.
2015 (srw15.mp4). Snow piled up to cover our fencepost and the tall shrub thicket by the end of March. Most of the snow melted in late May, but the big drift lasted into mid-June and there was a spring snowstorm on June 4. The camera recorded multiple photos of us working busily during our June 21 visit. By early September the low vegetation was brown and the willow shrubs yellow, but the alders were still green. Several September snows mostly melted, but the September 24th snow stayed for the winter. Mysterious tracks on October 4 look like a bear got inside the fence without destroying it completely. The snow got deep quickly in November.

Serpentine Hot Springs
Bering Land Bridge National Preserve

Latitude 65.8523°, longitude -164.7078°
Elevation 492 ft (150 m), looking north at birch shrub-lichen tundra with Hot Springs Creek in the background
2013 (srt13.mp4). We started this camera in late summer of 2013 and it operated intermittently through the winter of 2013-14, The low shrubs in the foreground that turn red in the fall are birch (*Betula nana*), while the white areas in between them are lichens, and the shrubs that turn yellow along the creek in the background are willows. The camera battery was dead for most of November and all of December.
2014 (srt14.mp4). Our first images from late January showed a discontinuous snowpack, very unusual for this location in mid-winter. Persistent, continuous snow didn't arrive until early March, and most of the snow melted off in late April. The winter of 2014-15 was more normal, with snow present from October through early May, but there was a melt-off event in November of 2014. Some caribou are seen grazing on lichens in the foggy photos from December 11.
2015 (srt15.mp4). Caribou were in the area throughout February, March, and April, with especially good views on Feb. 7 and April 12. Tracks show they came very close to the camera on March 5, but our hourly camera shot missed it. Caribou feeding craters in the snow are visible in February also. A brief thaw in late February created some breaks in the snow that were covered over later. Snowmelt started in late April and progressed quickly in the 2nd week of May. Green-up started in the last days of May and was complete by mid-June. In late August and early September the shrub birches were orange and the streamside willows were yellow. Dustings of snow came and went throughout September and October, and caribou made another appearance on October 14. The snow finally stuck in early November.

Upper Charley River
Yukon-Charley Rivers National Preserve
Latitude 64.5167°, longitude -143.2022°
Elevation 3654 ft (1114 m), looking north at birch shrubs
2013 (uch13.mp4). Our photos start in late July. In early September the birch shrubs turned orange before dropping their leaves by the middle of the month, in time for the first snowstorm. Warm weather in October melted most of the snow from the valley in the background, but not the hilltop near the camera. Batteries ran out in mid-November.
2014 (uch14.mp4). We restarted the camera in late May, when the snow was gone but leaves had not yet come out on the birch shrubs. Leaf-out occurred in early June, but June 19th surprised us with one last snowstorm. The shrub on the right with white flowers in early July is Labrador tea (*Ledum decumbens*). After another fall with orange leaves on the birch and some ephemeral snow in September, a solid snow cover formed in early October. Snow bridging across the camera lens obscured our view for most of December.
2015 (uch15.mp4). The camera quite working from Jan 26 until our visit on August 7. Red shrubs and a dusting of snow in late August mark the early fall season, and other dustings of snow came in September. Snow finally stuck for good around October 1st near the camera but was patchy into mid-October and the lower elevations in the distance. The camera was obscured by snow through most of December.